CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 81-18

NPDES NO. CA 0028070

CITY & COUNTY OF SAN FRANCISCO
SAN FRANCISCO INTERNATIONAL AIRPORT
INDUSTRIAL WASTE DISCHARGE

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. City and County of San Francisco, San Francisco International Airport, hereinafter called the discharger, by application dated July 24, 1980, has applied for renewal of waste discharge requirements and a permit to discharge wastes under the National Pollutant Discharge Elimination System.

2. The discharger proposes to discharge a current annual average dry weather flow of 0.85 million gallons per day (mgd) of treated industrial wastewater and a peak wet weather flow of 1.7 mgd, containing pollutants into a combined outfall force main with final disposal into San Francisco Bay a water of the United States, at a point approximately one mile north-east of Point San Bruno (Latitude 22 deg., 39 min., 55 sec; Longitude 22 deg., 21 min., 41 sec.). The same outfall facilities are presently used by Merck Chemical Company, the Cities of Burlingame, Millbrae, and South San Francisco, and for discharge of the Airport's secondarily treated sanitary wastewater.

3. The discharger is constructing new waste collection and treatment facilities which will provide chemically assisted biological treatment. The dry weather design capacity is 1.2 mgd and the wet weather design capacity is 1.7 mgd. When total flow exceeds 1.7 mgd, stormwater will be diverted to two storage basins for postponed treatment. Basin capacities are 0.84 million gallons and 3.1 million gallons. During severe storms, when the capacity of treatment and storage are exceeded, excess stormwater runoff will be discharged without treatment nearshore. The industrial waste collection system is separate from the stormwater collection system so that industrial waste will be treated and discharged to deep water at all times. Treatment plant sludge will be dried at the existing drying beds and disposed of at an authorized landfill. Proposed discharges are described below:

   - Waste No. 001 consists of industrial wastewater from aircraft service, aircraft maintenance, aircraft washing, ground vehicle service and maintenance and rental car service and surface drainage from aircraft washing areas and polluted portions of aircraft ramps and maintenance areas. During wet weather Waste No. 001 includes stormwater runoff up to the combined peak wet weather flow of 1.7 mgd. This waste is discharged into the combined deep water outfall.

- Waste No. 002 consists of relatively unpolluted stormwater runoff in excess of treatment and storage capacity (0.84 million gallon basin). The runoff is from the area of the airport south of taxiway S, including the United Airlines Cargo and service facilities, the southside of the passenger terminal and the TWA and Pan Am service areas. Discharge occurs from pump Station No. 1 into San Francisco Bay.

- Waste No. 003 consists of relatively unpolluted stormwater runoff in excess of treatment and storage capacity (3.1 million gallon basin). The runoff is from the area of the airport north of taxiway S, including the United Airlines maintenance base and the vehicle parking areas on the northwest side of the passenger terminal. Discharge occurs from pump station no. 2 into Seaplane Harbor.

4. A Water Quality Control Plan for the San Francisco Bay Basin was adopted by the Board on April 8, 1975. The Basin Plan contains water quality objectives for San Francisco Bay.

5. The Board made the following finding in Order No. 77-25 (amendment to NPDES permit):

> "Order No. 75-76 includes a prohibition against discharge at any point at which the wastewater does not receive an initial dilution of at least 10:1. The discharger has requested that exemptions be granted for high wastewater flows occurring as a result of stormwater runoff. For such wet weather flows an inordinate burden will be placed on the discharger relative to the uses protected, and equivalent level of environmental protection can be achieved with intermittent near shore discharges."

These exemptions were granted by the Board in Order No. 77-25 and are continued as part of this order for waste nos. 002 and 003.

6. The beneficial uses of San Francisco Bay are:

a. Recreation
b. Fish migration and habitat
c. Habitat and resting for waterfowl and migratory birds
d. Industrial, water supply
e. Esthetic enjoyment
f. Navigation
g. Shellfish propagation and harvesting for human consumption.

7. This project is exempt from the provisions of chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

8. The discharge is presently governed by Waste Discharge Requirements Order Nos. 75-76 and 77-25 which allow discharge to San Francisco Bay.

9. The discharger and interested agencies and persons have been notified of the Board's intent to issue requirements for the proposed discharge and have been provided with the opportunity for a public hearing and the opportunity to submit their written views and recommendations.

10. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder, and to the provision of the Federal Water Pollution Control Act, as amended, and regulations and guidelines adopted thereunder, that the discharger shall comply with the following:

A. Prohibitions

1. The discharge at any point at which the wastewater does not receive an initial dilution of at least 10:1 is prohibited. Exceptions shall be made for stormwater runoff (Waste Nos. 002 and 003) in excess of the capacity of treatment and storage facilities.

2. There shall be no bypass or overflow of untreated wastewater to waters of the State either at the treatment facilities or from the collection system. Exceptions shall be made for stormwater runoff (Waste Nos. 002 and 003) in excess of the capacity of treatment and storage facilities.

3. The average dry weather flows shall not exceed 1.2 mgd. Average shall be determined over three consecutive months each year.

B. Effluent Limitations

1. The discharge into the Airport's outfall line of Waste 001 containing constituents in excess of the following limits is prohibited:

Constituent	Units	30-Day Average	Maximum Daily
COD	lbs/day	1770	3540
	kg/day	800	1600
	mg/l	125	250
BOD_5	lbs/day	350	710
	kg/day	160	320
	mg/l	25	50
Total Suspended Solids	lbs/day	350	710
	kg/day	160	320
	mg/l	25	50

Constituent	Units	30-Day Average	Maximum Daily
Settleable Solids	ml/l-hr	0.20	0.50
Oil & Grease	lbs/day	140	280
	kg/day	64	130
	mg/l	10	15
Cadmium	lbs/day	1.4	2.8
	kg/day	0.64	1.3
	mg/l	0.10	0.20
Total Chromium	lbs/day	4.3	8.6
	kg/day	1.9	3.8
	mg/l	0.30	0.60
Copper	lbs/day	2.8	5.6
	kg/day	1.3	2.6
	mg/l	0.20	0.40
Lead	lbs/day	1.4	2.8
	kg/day	0.64	1.3
	mg/l	0.1	0.2
Mercury	lbs/day	0.014	0.028
	kg/day	0.0064	0.013
	mg/l	0.001	0.002
Nickel	lbs/day	14	28
	kg/day	6.4	13
	mg/l	1.0	2.0
Zinc	lbs/day	7.1	14.2
	kg/day	3.2	6.4
	mg/l	0.5	1.0
Cyanide	lbs/day	1.4	2.8
	kg/day	0.64	1.3
	mg/l	0.1	0.2
Phenolic Compounds	lbs/day	7.1	14.2
	kg/day	3.2	6.4
	mg/l	0.5	1.0

2. The discharge of Waste 001 into the Airport's outfall line shall not have pH of less than 6.0 nor greater than 9.0.

3. Waste 001 as discharged into the Airport's outfall line shall not have a chlorine residual greater then 0.0 mg/l.*

*Compliance with this limitation may be demonstrated at the point of discharge from the combined outfall to the receiving water.

4. Waste 001 as discharged into the Airport's outfall line shall meet the following limits of toxicity:

> The survival of test fishes in 96-hour bioassays of the effluent shall be a 90 percentile value of not less than 50 percent survival.**

5. Wastes 002 and 003 as discharged shall meet the following limits of toxicity:

> The survival of test fishes in 96-hour bioassays of the effluent shall be a median of 90 percent survival and a 90 percentile value of not less than 70 percent survival.

6. The discharge of Wastes 002 and 003 shall not have a pH of less than 6.5 nor greater than 8.5.

7. The discharge of Waste 002 and 003 containing constituents in excess of the following limit is prohibited:

Constituent	Unit	Daily Maximum
Settleable Matter	ml/l-hr	1.0

Daily maximum is defined as the average of at least three grab samples taken at equal intervals on a given day during periods of discharge.

C. Receiving Water Limitations

1. The discharge of any waste shall not cause the following conditions to exist in waters of the State at any place.

   a. Floating, suspended, or deposited macroscopic particulate matter or foam;

   b. Bottom deposits or aquatic growths;

   c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

   d. Visible, floating, suspended or deposited oil or other products of petroleum origin;

   e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

**Samples may be dechlorinated in the laboratory prior to testing to provide a chlorine residual equal to that of the waste in the combined outfall.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

a.	Dissolved oxygen	5.0 mg/l minimum. Annual median - 80% saturation. When natural factors cause lesser concentration(s) than those specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.
b.	Dissolved sulfide	0.1 mg/l maximum
c.	pH	Variation from natural ambient pH by more than 0.2 pH units.
d.	Un-ionized ammonia	0.025 mg/l as N Annual Median 0.4 mg/l as N Maximum
e.	Total Coliform organisms	240 MPN/100 ml, median of five consecutive samples maximum. 10,000 MPN/100 ml, any single sample, maximum when verified by a repeat sample taken within 48 hours.

3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. Land Disposal Requirements

1. The treatment, disposal or processing of sludge shall not create a pollution or nuisance as defined in Section 13050(l) and (m) of the California Water Code.

2. The processing and/or disposal of sludge shall not cause waste material to be in any position where it is, or can be carried from the land disposal sites and deposited in waters of the State.

3. The land disposal sites shall have facilities adequate to divert surface runoff from adjacent areas, and to prevent any conditions that would cause drainage from the materials in the disposal sites into San Francisco Bay. Adequate protection is defined as protection from at least a 100-year storm and from the highest tidal stage that may occur.

E. Provisions

1. The discharger shall comply with all Prohibitions, Effluent and Receiving Water Limitations, Land Disposal Requirements, and Provisions upon commencement of discharge into the combined outfall.

2. The requirements prescribed by this Order supersede the requirements prescribed by Resolution No. 499, Resolution No. 692, Order No. 75-76, and Order No. 77-25, adopted by the Board on September 19, 1963, August 19, 1965, November 18, 1975, and March 15, 1977, respectively, and are effective upon commencement of discharge, PROVIDED HOWEVER, that applicable requirements prescribed in the above Resolutions and Orders and cited in Cease and Desist Resolution Nos. 602 and 767, and Cease and Desist Order Nos. 73-37, and 77-34 shall remain in effect and be in addition to the requirements prescribed in the Order until the above Cease and Desist Resolutions and Cease and Desist Orders are rescinded by this Board.

3. The discharger shall comply with the Self-Monitoring Reporting Program as ordered by the Executive Officer.

4. The discharger shall comply with all items of the attached "Standard Provisions and Reporting Requirements" dated April 1977 except A.5.

5. The discharger shall review and update annually its contingency plan as required by Regional Board Resolution No. 74-10. The discharge of pollutants in violation of this Order where the discharger has failed to develop and/or implement a contingency plan will be basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.

6. This Order expires April 15, 1986. The discharger must file a Report of Waste Discharge not later than 180 days in advance of such date as an application for issuance of new waste discharge requirements.

7. This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Water Pollution Control Act, or amendments thereto, and shall take effect at the end of ten days from date of hearing provided the Regional Administrator of the U. S. Environmental Protection Agency has no objections.

I, Fred H. Dierker, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on April 15, 1981.

FRED H. DIERKER
Executive Officer

Attachments:

Standard Provisions & Reporting Requirements 4/77
Resolution 74-10
Self-Monitoring Program

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

City & County of San Francisco

San Francisco International Airport

Industrial Waste Discharge

NPDES NO. CA 0028070

ORDER NO. 81-18

CONSISTS OF

PART A

AND

PART B

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT AND INTAKE

Station	Description
A-001	At any point in the treatment facilities headworks at which all waste tributary to the system is present and preceding any phase of treatment.

B. EFFLUENT

Station	Description
E-001	At any point in the plants outfall from the treatment facilities between the point of discharge into the Airport's outfall and the point at which all waste from the plant is present. (May be the same as E-001-D.)
E-001-D	At any point in the disinfection facilities for Waste E001 at which point adequate contact with the disinfectant is assured.
E-002	At any point in the combined outfall from the treatment facilities between the point of discharge into San Francisco Bay and the point at which all waste tributary to that combined outfall is present.
E-003	At the point of discharge from the southern sump (pump station No. 1).
E-004	At the point of discharge from the northern sump (pump station No. 2).

C. RECEIVING WATERS

Station	Description
C-1	At a point in San Francisco Bay located over the geometric center of the outfall's discharge ports.
C-2	At a point in San Francisco Bay located midway between C-1 and C-3.
C-3	At a point in San Francisco Bay located in the center of the waste plume.

C-50-SW	At a point in San Francisco Bay, located 50 feet southwesterly, along the outfall line shoreward from Station C-1.
C-50-NW	At a point in San Francisco Bay, located 50 feet northwesterly from Station C-1, normal to the outfall line.
C-50-NE	At a point in San Francisco Bay located 50 feet northeasterly from Station C-1, along the outfall line extended.
C-50-SE	At a point in San Francisco Bay located 50 feet southeasterly from Station C-1, normal to the outfall.
C-300-N thru C-300-NW (8 stations)	At a point in San Francisco Bay located on a 300-foot radius from the geometric center of the outfall diffuser, at equidistant intervals, with Station C-300-SW located shoreward from Station C-1 at the outfall line.
C-R-NW	At a point in San Francisco Bay located approximately 1500 feet northerly from the point of discharge.
C-R-SE	At a point in San Francisco Bay, located approximately 1500 feet southeasterly from the point of discharge.

D. SEDIMENTS

Station	Description
B-1	At a point in San Francisco Bay located fifty (50) feet perpendicular to and south of the diffuser, and two hundred and fifty (250) landward from the end of the diffuser.
B-2	At a point in San Francisco Bay located one hundred fifty (150) feet perpendicular to and south of the diffuser, and two hundred and fifty (250) feet landward from the end of the diffuser.
B-3	At a point in San Francisco Bay located three hundred (300) feet perpendicular to and south of the diffuser, and two hundred and fifty (250) feet landward from the end of the diffuser.

B-4	At a point in San Francisco Bay located fifty (50) feet perpendicular to and south of the diffuser, and six hundred (600) feet landward from the end of the diffuser.
B-5	At a point in San Francisco Bay located one hundred fifty (150) feet perpendicular to and south of the diffuser, and six hundred (600) feet landward from the end of the diffuser.
B-RS	At a point in San Francisco Bay located approximately fifteen hundred (1500) feet south of the center of the diffuser.

E. LAND OBSERVATIONS

Station	Description
P-1 thru P-'n'	Located along the periphery of the waste treatment or disposal facilities, at equidistant intervals, not to exceed 100 feet. (A sketch showing the locations of these stations will accompany each report.)

II. SCHEDULE OF SAMPLING AND ANALYSIS

A. The schedule of sampling and analysis shall be that given as Table I.

I, Fred H. Dierker, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 81-18.

2. Does not include the following paragraphs of Part A:

   C.3.

3. Is effective on the date shown below.

4. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executive Officer.

Attachment:
Table I

FRED H. DIERKER
Executive Officer

Effective Date 4-20-81

TABLE I

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS 1/

Sampling Station	D-001			E-001-D			E-002			E-003	E-004	All Sta.	All Sta.	All Sta.
TYPE OF SAMPLE	Cont	C-24	G	G	C-24	Cont	G	C-24	Cont	G	G	Q	G	BS
Flow Rate (mgd)	cont								cont					
BOD, 5-day, 20° C, & COD (mg/l & kg/day)		W						5/W						
Chlorine Residual & Dosage (mg/l & kg/day)						cont			cont					
Settleable Matter (ml/1-hr. & cu. ft./day)			D				5/W			5/ M	5/ M			
Total Suspended Matter (mg/l & kg/day)		D						5/W						
Oil & Grease (mg/l & kg/day) 2/		W						2M						
Coliform (Total) (MPN/100 ml) per req't				3/W			5/W						3/4/ 2M	
Fish Toxicity, 96-hr. TL_{50} % Survival in undiluted waste					M			M		5/ M	5/ M			
Ammonia Nitrogen (mg/l & kg/day)		W												
Nitrate Nitrogen (mg/l & kg/day)														
Nitrite Nitrogen (mg/l & kg/day)														
Total Organic Nitrogen (mg/l & kg/day)														
Total Phosphate (mg/l & kg/day)														
Turbidity Nephelometric Turbidity Units)								W					2/M	
pH (units)	cont						D			M 5/	M 5/		2/M	
Dissolved Oxygen (mg/l and % Saturation)							D						2/M	
Temperature (°C)							D						2/M	
Apparent Color (color units)								W					2/M	
Secchi Disc (inches)													2/M	
Sulfides (if DO < 5.0 mg/l) Total & Dissolved (mg/l)							D						2/M	
Arsenic (mg/l & kg/day)														
Cadmium (mg/l & kg/day)		M 6/												
Chromium, Total (mg/l & kg/day)		M 6/												
Copper (mg/l & kg/day)		M 6/												
Cyanide (mg/l & kg/day)		M 6/												
Silver (mg/l & kg/day		Q												
Lead (mg/l & kg/day)		M 6/												

TABLE I (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	E-001			E-001-D			E-002			E-003	E-004	All Sta P	All Sta C	All Sta B
TYPE OF SAMPLE	Cont	C-24	G	G	C-24	Cont	G	C-24	Cont	G	G	O	G	BS
Mercury (mg/l & kg/day)		M 6/												
Nickel (mg/l & kg/day)		M 6/												
Zinc (mg/l & kg/day)		M 6/												
PHENOLIC COMPOUNDS (mg/l & kg/day)		M 6/												
All Applicable Standard Observations		M					D			M 5/	M 5/	M	2/M	
Bottom Sediment Analyses and Observations		M 6/												Y
Total Identifiable Chlorinated Hydrocarbons (mg/l & kg/day)														
Non-dissociated Ammonium hydrocarbon as N (mg/l)													3M	

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample
C-24 = composite sample - 24-hour
C-X = composite sample - X hours (used when discharge does not continue for 24-hour period)
Cont = continuous sampling
DI = depth-integrated sample
BS = bottom sediment sample
O = observation

TYPES OF STATIONS

I = intake and/or water supply stations
A = treatment facility influent stations
E = waste effluent stations
C = receiving water stations
P = treatment facilities perimeter stations
L = basin and/or pond levee stations
B = bottom sediment stations

FREQUENCY OF SAMPLING

E = each occurence
H = once each hour
D = once each day
W = once each week
M = once each month
Y = once each year

2/H = twice per hour
2/W = 2 days per week
5/W = 5 days per week
2/M = 2 days per month

2H = every 2 hours
2D = every 2 days
2W = every 2 weeks
3M = every 3 months
Cont = continuous

FOOTNOTES FOR TABLE I

1/ During any day when bypassing occurs from any treatment unit(s) in the plant, the monitoring program for the effluent shall include the following in addition to the above schedule for sampling, measurement and analyses:

1. Composite sample for BOD, Total suspended solids, oil and grease (influent & effluent).

2. Grab sample for Coliform (Total and Fecal), Settleable matter, and chlorine residual continuous or every two hours.

3. Continuous monitoring of flow.

2/ Oil and grease sampling shall consist of 3 grab samples taken at 8-hour intervals during the sampling day, with each grab being collected in a glass container and analyzed separately. Results shall be expressed as a weighted average of the 3 values, based upon the instantaneous flow rates occurring at the time of each grab sample.

If the plant is not staffed 24 hours per day or if the discharge does not occur continuously, then the three grab samples may be taken at approximately equal intervals during the period that the plant is staffed or during the period that discharge is made.

In the event that sampling for oil and grease once every two weeks or less frequently shows an apparent violation of the waste discharge permit 30-day average limitation (considering the results of one or two day's sampling as a 30-day average), then the sampling frequency shall be increased to weekly, so that a true 30-day average can be computed and compliance can be determined.

3/ Five samples per station each day.

4/ Stations C-1, 2, 3, CR-NW, and CR-SE only.

5/ Take a minimum of 3 grab samples on the day of sampling. The first sample for each day shall be taken during the first hour of discharge, and the others at equal time intervals thereafter. The three samples shall be combined and analyzed. Sampling or observations shall be done during the first major storm of each calendar month.

6/ If any sample exceeds 30 day average limitation, then sample weekly until full compliance has been achieved for the two consecutive calendar months based on a valid 30 day arithmetic average data.